

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
31 March 2005 (31.03.2005)

PCT

(10) International Publication Number  
**WO 2005/028691 A1**

(51) International Patent Classification<sup>7</sup>: **C22C 23/02**

(21) International Application Number:  
PCT/JP2004/013974

(22) International Filing Date:  
16 September 2004 (16.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2003-326563 18 September 2003 (18.09.2003) JP  
2004-150393 20 May 2004 (20.05.2004) JP

(71) Applicants (for all designated States except US): **TOYOTA JIDOSHA KABUSHIKI KAISHA** [JP/JP];  
1, Toyotacho, Toyota-shi, Aichi 4718571 (JP). **MITSUBISHI ALUMINUM COMPANY, LTD.** [JP/JP]; 3-3,  
Shiba 2-chome, Minato-ku, Tokyo 1058546 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HIJII, Takumi**

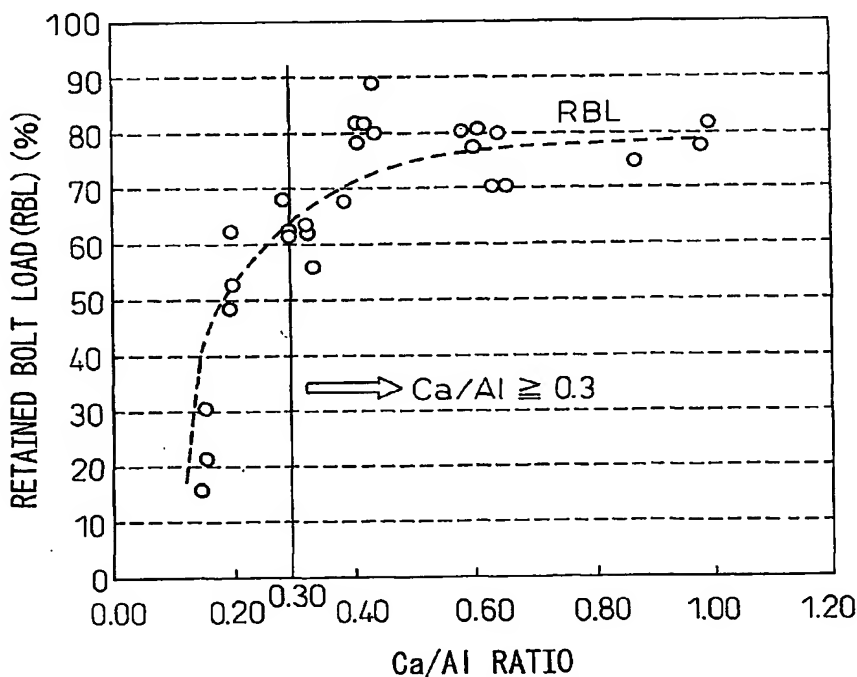
[JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, 1, Toyotacho, Toyota-shi, Aichi 4718571 (JP). **KITANO, Tomoyasu** [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, 1, Toyotacho, Toyota-shi, Aichi 4718571 (JP). **OHORI, Koichi** [JP/JP]; c/o Mitsubishi Aluminum Company, Ltd., Technical Development Center, 85, Hiramatsu, Susono-shi, Shizuoka 4101127 (JP). **NAKAURA, Yusuke** [JP/JP]; c/o Mitsubishi Aluminum Company, Ltd., Technical Development Center, 85, Hiramatsu, Susono-shi, Shizuoka 4101127 (JP). **MATSUYAMA, Harutoshi** [JP/JP]; c/o Mitsubishi Aluminum Company, Ltd., Fuji Plant, 85, Hiramatsu, Susono-shi, Shizuoka 4101127 (JP).

(74) Agents: **AOKI, Atsushi** et al.; A. Aoki, Ishida & Associates, Toranomom 37 Mori Bldg., 5-1, Toranomom 3-chome, Minato-ku, Tokyo 1058423 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,

[Continued on next page]

(54) Title: **HEAT RESISTANT MAGNESIUM DIE CASTING ALLOYS**



(57) Abstract: A heat resistant magnesium die casting alloy simultaneously improved in heat resistance and castability and expanded in range of application is provided. It comprises, includes, by wt %, the following composition: Al: over 6 % to not more than 10 %, Ca: 1.8 to 5 %, Sr: 0.05 to 1.0 %, Mn: 0.1 to 0.6 %, and Bal: Mg and unavoidable impurities, the ratio Ca/Al of the Ca content to the Al content being 0.3 to 0.5. To improve the corrosion resistance, 0.1 to 3 % of a RE may also be added.



MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*